

CURRENT SENSOR

PRODUCT SERIES: STB-LF/3

PRODUCT PART NUMBER: STB-366LF/3

VERSION: Ver2.1



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CONTENT

1.	Description	2
2.	Electrical parameters.....	3
3.	Dimensions:	4

1. Description

STB-LF/3 series current sensors are based on close loop principle. The sensor can detect the current with DC, AC, pulse and irregular wave shape with current output.

Typical application

- Static converters for DC motor drives
- AC variable speed and servo motor drives
- Power supplies for welding applications
- Switched model power supplies (SMPS)
- UPS
- Battery supplied applications

General parameters

Parameter	Symbol	Unit	Value
Sensor operating temperature	T_A	°C	-20 ~ 90
Storage temperature	T_S	°C	-40 ~ 95
Mass	m	g	95

Ratings

Parameter	Unit	Value
Primary involved potential	V AC/DC	1500
Maximum surrounding air temperature	°C	90

Isolation parameters

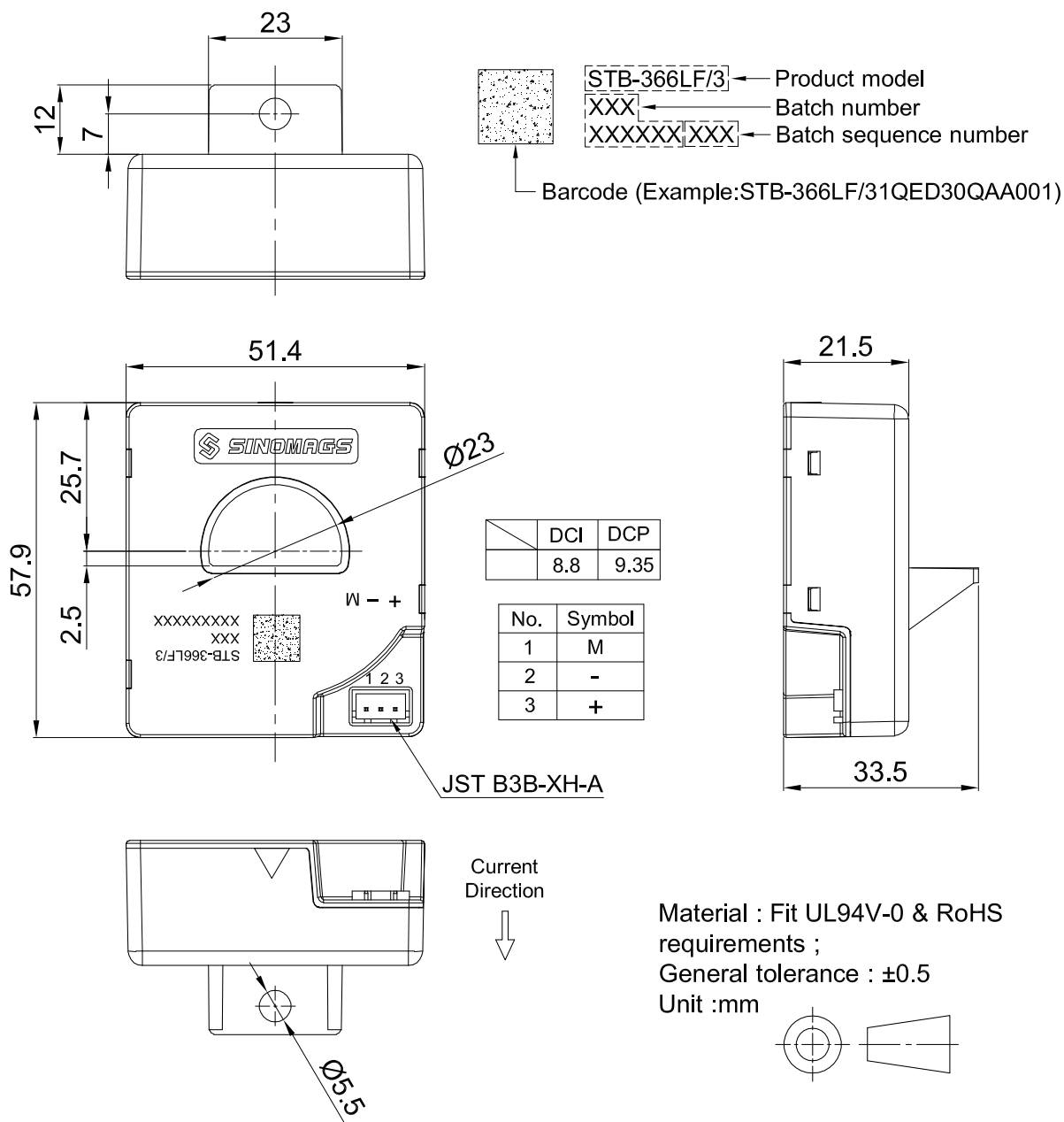
Parameter	Symbol	Unit	Value	Remark
RMS voltage for AC test 50Hz/1 min	U_d	kV	5	
Impulse withstand voltage 1.2/50μs	U_w	kV	>8	
RMS Voltage for partial discharge extinction @ 10pC	Ue	kV	>2	
Clearance distance (pri. -sec)	dCl	mm	8.8	Shortest distance through air
Creepage distance (pri. -sec)	dCp	mm	9.35	Shortest path along device body
Case material	-	-	V0	According to UL 94 Shell material: PA66 Adhesive material: Polyurethane
Comparative tracking index	CTI		>600	
Insulation resistance	S	MΩ	>2000	

2. Electrical parameters

Condition: $V_{CC} = \pm 15V$, $T_A = 25^\circ C$, $R_M = 3\Omega$ unless specified.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal r.m.s current	I_{PN}	A		366		
Primary current measuring range	I_{PM}	A	-950		950	$V_{CC} = \pm 15V$
Measuring resistance@ $\pm 15V$	R_M	Ω	3		49	$\pm 366 A_{max}$
			3		3	$\pm 950 A_{max}$
Secondary nominal r.m.s current	I_{SN}	mA		183		
Resistance of secondary winding	R_S	Ω			21.7	@ $T_A = 90^\circ C$
					18	@ $T_A = 25^\circ C$
Supply voltage	V_{CC}	V	± 14.1	15	± 15.9	
Current consumption	I_{CC}	mA		$26 + I_S$		
Conversion ratio	N_S			1 : 2000		
Offset current@ $I_P = 0$	I_{OE}	mA			± 0.20	@ $T_A = 25^\circ C$
Residual current after $3 \times I_{PN}$	I_{OM}	mA			± 0.20	@ $I_P = 0$
Thermal drift of I_O	I_{OT}	mA		± 0.1	± 0.30	- $20^\circ C \dots + 90^\circ C$
Residual output Temp. Coef.	I_{ORT}	mA/ $^\circ C$	-0.01		0.01	- $20^\circ C \dots + 90^\circ C$
Linearity error	ε_L	% of I_{PN}			0.1	
Output Temp. Coef.	ε_{LT}	%/ $^\circ C$	-0.02		0.02	- $20^\circ C \dots + 90^\circ C$
Reaction time @ 10 % of I_{PN}	t_{d10}	μs			0.5	
Reaction time @ 90 % of I_{PN}	t_{d90}	μs			1	
di/dt accurately followed	di/dt	A/ μs	100			
Frequency bandwidth	BW	kHz	DC		100	-1 dB bandwidth
Overall accuracy@ I_{PN}	ε_{tot}	%	-0.42		0.42	$T_A = 25^\circ C$
			-0.6		0.6	- $20^\circ C \dots + 90^\circ C$

3. Dimensions:



Mechanical characteristics

- General tolerance ± 0.5 mm
- Transducer fastening hole $\varnothing 5.5$ mm
steel screw M5
Recommended fastening torque 3.4 Nm 2.5 Lb.-Ft.
- Primary through-hole $\varnothing 23$ mm
- Connection of secondary JST B3B-XH-A